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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.
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EXAMINER

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ART UNIT	PAPER NUMBER
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2859

DATE MAILED:

08/25/00

Please find below and/or attached an Office communication concerning this application or proceeding.

Commissioner of Patents and Trademarks

<b>Office Action Summary</b>	Application No. <b>09/323,650</b>	Applicant(s) <b>Chubb et al.</b>
	Examiner <b>Lydia De Jesus</b>	Group Art Unit <b>2859</b>

Responsive to communication(s) filed on \_\_\_\_\_.

This action is **FINAL**.

Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

A shortened statutory period for response to this action is set to expire 3 month(s), or thirty days, whichever is longer, from the mailing date of this communication. Failure to respond within the period for response will cause the application to become abandoned. (35 U.S.C. § 133). Extensions of time may be obtained under the provisions of 37 CFR 1.136(a).

#### Disposition of Claims

Claim(s) 1-17 is/are pending in the application.

Of the above, claim(s) \_\_\_\_\_ is/are withdrawn from consideration.

Claim(s) \_\_\_\_\_ is/are allowed.

Claim(s) 1-17 is/are rejected.

Claim(s) \_\_\_\_\_ is/are objected to.

Claims \_\_\_\_\_ are subject to restriction or election requirement.

#### Application Papers

See the attached Notice of Draftsperson's Patent Drawing Review, PTO-948.

The drawing(s) filed on \_\_\_\_\_ is/are objected to by the Examiner.

The proposed drawing correction, filed on \_\_\_\_\_ is  approved  disapproved.

The specification is objected to by the Examiner.

The oath or declaration is objected to by the Examiner.

#### Priority under 35 U.S.C. § 119

Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).

All  Some\*  None of the CERTIFIED copies of the priority documents have been received.

received in Application No. (Series Code/Serial Number) \_\_\_\_\_.

received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

\*Certified copies not received: \_\_\_\_\_.

Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

#### Attachment(s)

Notice of References Cited, PTO-892

Information Disclosure Statement(s), PTO-1449, Paper No(s). 2

Interview Summary, PTO-413

Notice of Draftsperson's Patent Drawing Review, PTO-948

Notice of Informal Patent Application, PTO-152

--- SEE OFFICE ACTION ON THE FOLLOWING PAGES ---

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## **DETAILED ACTION**

### ***Information Disclosure Statement***

1. The information disclosure statement submitted by Applicant on June 1, 1999 has been placed of record in the file and the documents listed therein have been considered.

### ***Claim Rejections - 35 USC § 102***

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless --

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 1-2, 5, 12-13, and 17 are rejected under 35 U.S.C. 102(b) as being anticipated by Wickersheim et al. [hereinafter Wickersheim].

Wickersheim discloses an optical temperature sensor (as shown in Fig. 8), said sensor comprising an emitter [47] having a selective energy emission band, said emitter emitting energy within said emission band in response to a temperature of said emitter (Col. 5, lines 41-48); a light pipe [86] having a first end and a second end, said first end communicating with said emitter; an optical bandpass filter [113, 115] (Col. 5, lines 63-68) communicating with said second end, said filter having a pass band corresponding to said emission band; and

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a detector [114, 116] communicating with said filter, said detector detecting said emitted energy as a measure of said temperature (Col. 5, line 65 - Col. 6, line 30). Said light pipe is composed of quartz (Col. 6, lines 59-60) .The detector can be a silicon photo-diode (Col. 12, line 62) .

Wickersheim lists various known existing phosphor compounds which can be selected as the emitter by a trial and error process (Col. 7, line 1 - Col. 8, line 15). Among these are - phosphors containing a rare earth element, also the emitter being a high temperature host material which is doped with a rare earth element (Col. 2, line 65-66), i.e. ytterbium. The sensor disclosed by Wickersheim performs temperature measurements in a range from -100° C to 400° C (173.15 K to 673.15 K).

***Claim Rejections - 35 USC § 103***

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out

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the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103© and potential 35 U.S.C. 102(f) or (g) prior art under 35 U.S.C. 103(a).

5. Claims 3-4, 6-9, and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wickersheim in view of Nelson.

Wickersheim discloses an optical temperature sensor as claimed, as stated above in paragraph 4, but fails to show that the optical temperature sensor operates in temperatures above 2,000 K and does not explicitly disclose the particular materials claimed for the emitter, as recited in claims 4 and 6-9.

Nelson teaches that an emitter of rare earth metal oxide is thermally excited at a temperature in the range of 1500° C- 2000° C (1773.15 K - 2273.15 K) causing it to emit radiation in a spectral irradiance profile that has a narrow radiated flux peak, as shown in Fig. 3.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to select a particular emitter, i.e rare earth oxide, for the apparatus disclosed by Wickersheim which allows operation of the sensor at temperatures above 2,000 K as suggested by Nelson, and selecting materials for the remaining elements of the sensor that will withstand such temperatures, in order to provide an optical temperature sensor for environments in which other types of sensors are inoperative.

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With respect to claims 4 and 6-9: the particular materials chosen for the composition of the emitter of the apparatus disclosed by Wickersheim, absent any criticality, is only considered to be the use of a "preferred" materials out of a plurality materials well known in the art as selective emitters that a person having ordinary skill in the art at the time the invention was made would have find obvious to provide using routine experimentation based, among other things, on the intended use of applicant's apparatus, i.e., suitability for the intended use of applicant's apparatus.

See In re Leshin, 125 USPQ 416 (CCPA 1960) where the court stated that a selection of a material on the basis of suitability for the intended use of an apparatus would be entirely obvious.

6. Claims 10-11, and 14-15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wickersheim.

Wickersheim discloses an optical temperature detector as claimed, as stated above in paragraph 4, but does not explicitly disclose the particular materials which compose the light pipe, as recited in claims 10-11, and the particular detector selected for the apparatus, as recited in claim 14-15.

With respect to claims 10-11: the particular material selected for the light pipe of the apparatus disclosed by Wickersheim , absent any criticality, is only considered to be the use of a "preferred" material out of a plurality of well known materials commonly used for light pipes in optical temperature sensors that a person having ordinary skill in the art at the time the invention was made would have find obvious to provide using routine experimentation based, among other things, on the intended use of applicant's apparatus, i.e., suitability for the intended use of

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applicant's apparatus. See In re Leshin, 125 USPQ 416 (CCPA 1960) where the court stated that a selection of a material on the basis of suitability for the intended use of an apparatus would be entirely obvious.

Official Notice is taken with respect to the limitations in claims 14-15 since the particular detector claimed by applicant, absent any criticality, is only considered to be one of numerous detectors that a person having ordinary skill in the art will find obvious to provide in an optical temperature sensor for the purpose of determining the temperature of an object according to the thermal radiation emitted by said object.

### *Conclusion*

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Mc Farland discloses compositions of various phosphor materials. Brogardh et al. disclose fiber optical temperature measurement devices. Fehrenbach et al. disclose temperature sensors using fluorescent materials such as chromium doped yttrium aluminum garnet. Fevrier et al. disclose an optical fiber temperature sensor in which a section of the optical fiber is doped with a rare earth element. Rose et al. disclose composites of rare earth metal compounds as selective infrared line emitters. Sarraf discloses a rare earth emitter.

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Lydia M. De Jesús whose telephone number is (703) 306-5982.

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Any inquiry of a general nature or related to the status of this application should be directed to the Group receptionist whose telephone number (703) 308-1782. The fax number for this Group is (703) 308-7722.



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August 22, 2000